

**Anomalous  $\phi$  meson suppression in Au+Au collisions at  $\sqrt{s_{NN}}=200$  GeV  
measured by the PHENIX experiment at RHIC**

**M. Naglis<sup>a</sup>**, for the PHENIX Collaboration

<sup>a</sup> Weizmann Institute of Science  
Rehovot 76100, Israel

Contact e-mail: *maxim.naglis@weizmann.ac.il*

The suppression of hadrons with high transverse momentum in ultra-relativistic heavy ion collisions compared to expectations from scaled p+p results is one of the most interesting findings at RHIC. A clear difference between the suppression patterns of baryons and light mesons is observed in the intermediate  $p_T$  range suggesting that the suppression is governed by the number of valence quarks rather than the mass of the hadron.

The PHENIX experiment at RHIC has studied the production of  $\phi$  meson in the  $K^+K^-$  decay channel in p+p, d+Au and Au+Au collisions at  $\sqrt{s_{NN}}=200$  GeV using three different techniques, involving different levels of kaon identification. This talk presents recent results on the production of the  $\phi$  meson and its nuclear modification factor  $R_{AA}$  measured over the  $p_T$  range of 1.0–7.0 GeV/ $c$ . The production of the  $\phi$  meson is suppressed in central Au+Au collisions as compared to p+p results scaled with the number of binary collisions. The amount of suppression is smaller than for  $\pi^0$  and  $\eta$  mesons and larger than for baryons in the intermediate  $p_T$  region suggesting a quark flavor dependence of the hadron suppression.